

Amendments to the Claims

Please amend Claims 1, 5, 7-9, 11 and 14-17, and add Claim 20 as follows.

1. (Currently Amended) A printing apparatus which prints using a printhead, wherein a printing controller for feedback-controlling driving of the printing apparatus comprises:

control information generation means for generating control information for controlling driving of a motor on the basis of a first driving pattern;

comparison means for comparing the control information and a threshold for determining an overload on driving of the motor; and

setting means for setting a second driving pattern, instead of the first driving pattern, on the basis of a comparison result of said comparison means.

2. (Original) The apparatus according to claim 1, wherein said control information generation means updates the control information in order to compensate for a deviation between the first driving pattern, and feedback information for driving of the motor that is detected by detection means.

3. (Original) The apparatus according to claim 1, wherein the control information includes a voltage value PWM-controlled to drive the motor.

4. (Original) The apparatus according to claim 1, wherein said setting means sets the second driving pattern to the first driving pattern again at a timing when the overload on the motor is canceled or predicted to be canceled.

5. (Currently Amended) The apparatus according to claim 1, ~~wherein~~
~~the printing apparatus further comprises~~ comprising storage means for storing at least one of the first and second driving patterns as a driving pattern generated in advance, and

wherein said setting means can select and set a driving pattern stored in said storage means.

6. (Original) The apparatus according to claim 1, wherein said setting means sets the first driving pattern as initial information, and generates the second driving pattern for changing driving of the motor on the basis of the comparison result of said comparison means and an allowable torque margin.

7. (Currently Amended) The apparatus according to claim 6, wherein the allowable torque margin is ~~given~~ defined by a difference between a minimum motor output torque and a maximum load torque.

8. (Currently Amended) The apparatus according to claim 1, wherein, when the control information exceeds the threshold from the comparison result of said comparison means, said setting means sets a lower-velocity driving pattern lower than the first driving pattern as a driving pattern for driving the motor.

9. (Currently Amended) The apparatus according to claim 1, wherein, when the control information does not exceed the threshold from the comparison result of said comparison means, said setting means sets a higher-velocity driving pattern higher than the first driving pattern as a driving pattern for driving the motor.

10. (Original) The apparatus according to claim 1, wherein, in control of first and second motors,
for a torque margin of the second motor \geq a torque margin of the first motor,
said comparison means compares control information for the first motor and a first threshold for determining an overload on driving of the first motor, and
said setting means sets a driving pattern for changing a load on driving of the first and second motors on the basis of a comparison result of said comparison means.

11. (Currently Amended) The apparatus according to claim ~~1~~ 10, wherein, in control of the first and second motors,
for a torque margin of the second motor $<$ a torque margin of the first motor,

said comparison means sets a second threshold for determining an overload on driving of the first and second motors, and compares control information for the first motor and the second threshold, and

said setting means sets a driving pattern for changing a load on driving of the first and second motors on the basis of a comparison result of said comparison means.

12. (Original) The apparatus according to claim 11, wherein the second threshold generated by said comparison means satisfies a relation: the first threshold > the second threshold.

13. (Original) The apparatus according to claim 10, wherein the first motor includes a DC motor which can be feedback-controlled.

14. (Currently Amended) The apparatus according to claim 1, ~~wherein~~
~~the printing apparatus further comprises~~ comprising printing data generation means for scanning a carriage supporting the printhead ~~on~~ relative to a printing medium and converting information transmitted from an external device into printing data complying with an arrangement of the printhead.

15. (Currently Amended) The apparatus according to claim 14, wherein the printhead ~~includes~~ comprises an ink-jet printhead which prints by discharging ink.

16. (Currently Amended) The apparatus according to claim ~~14~~ 15, wherein the printhead ~~includes a printhead which~~ discharges ink by using heat energy, and comprises an electrothermal transducer for generating heat energy to be applied to ink.

17. (Currently Amended) A printing apparatus control method of driving, on the basis of feedback control, a printing apparatus which prints using a printhead, comprising:

a control information generation step of generating control information for controlling driving of a motor on the basis of a first driving pattern;

a comparison step of comparing the control information and a threshold for determining an overload on driving of the motor; and

a setting step of setting a second driving pattern, instead of the first driving pattern, on the basis of a comparison processing result of the comparison step.

18. (Original) A printing apparatus which prints using a plurality of motors, wherein a motor driving device which drives a first motor by feedback control and a second motor by open-loop control comprises:

control information generation means for generating control information for each motor on the basis of a first driving pattern corresponding to each motor in order to drive the first and second motors;

comparison means for comparing control information of the first motor and a threshold for determining an overload on driving of the first motor; and

setting means for setting second driving patterns corresponding to the first and second motors by said control information generation means instead of the first driving pattern on the basis of a comparison result of said comparison means.

19. (Original) A method of controlling a printing apparatus which prints by driving a first motor by feedback control and a second motor by open-loop control, comprising:

a control information generation step of generating control information for each motor on the basis of a first driving pattern corresponding to each motor in order to drive the first and second motors;

a comparison step of comparing control information of the first motor and a threshold for determining an overload on driving of the first motor; and

a setting step of setting second driving patterns corresponding to the first and second motors instead of the first driving pattern on the basis of a comparison result of the comparison step.

20. (New) The apparatus according to claim 1, wherein, in control of first and second motors,

for a torque margin of the second motor $<$ a torque margin of the first motor,

said comparison means sets a threshold for determining an overload on driving of the first and second motors, and compares control information for the first motor and the set threshold, and

said setting means sets a driving pattern for changing a load on driving of the first and second motors on the basis of a comparison result of said comparison means.